

From: "Zhen, Davis"  
To: [younghs@cdmsmith.com](mailto:younghs@cdmsmith.com)  
Date: 11/9/2018 2:39:05 PM  
Subject: Re: Acoustic fish tracking study - operation of receiver PDI-AR-A08

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Thank you Howard.

Thanks,

Sent from my iPhone, please excuse typos

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Davis Zhen, Manager  
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On Nov 9, 2018, at 9:57 AM, Young, Howard S. <[younghs@cdmsmith.com](mailto:younghs@cdmsmith.com)> wrote:

Davis,

Ken is correct that the FSP does not specify the 15 -degree tilt criteria, it only says that the moorings should be checked for tilt to ensure they have been deployed on flat bottom not on a slope or fallen over. I was mistaken about the 15-degree maximum tilt being specified in the FSP, that was the general target provided in the field by the Pre-RD Group's subconsultant, HTI-Vemco, for tilt of the moorings.

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From: Tyrrell, Ken <[ken.tyrrell@aecom.com](mailto:ken.tyrrell@aecom.com)>  
Sent: Friday, November 09, 2018 8:25 AM  
To: Zhen, Davis <[Zhen.Davis@epa.gov](mailto:Zhen.Davis@epa.gov)>  
Cc: Coffey, Scott <[CoffeySE@cdmsmith.com](mailto:CoffeySE@cdmsmith.com)>; Sheldrake, Sean <[sheldrake.sean@epa.gov](mailto:sheldrake.sean@epa.gov)>; Young, Howard S. <[younghs@cdmsmith.com](mailto:younghs@cdmsmith.com)>; Vickstrom, Kyle E. <[vickstromke@cdmsmith.com](mailto:vickstromke@cdmsmith.com)>  
Subject: RE: Acoustic fish tracking study - operation of receiver PDI-AR-A08

Davis,

We are responding to your request about the status of acoustic receiver AR-08. During the monthly monitoring conducted on 11/1, this receiver reported a tilt of 30 degrees. AR-08 is one of three receivers located at the river 5 transect:

1. AR-08 (west bank)
2. AR-07 (mid-channel)
3. AR-06 (east bank)

We have reviewed the detection data for the three receivers from the 11/1 monthly monitoring and prior

events. We compared the detection counts from the other two receivers to the internal detections from AR-08. The ratio of detections from AR-06 and AR-07 to the internal detections from AR-08 is consistent across the monthly events, indicating there has not been a change in detection capability at AR-08. It is also important to note that fish passing through the RM 5 gate have been detected on all three receivers, such that even if AR-08 were compromised (and it does not appear to be), the other two receivers would detect any passing fish. Based on our review of the data, there is no implication on data quality for the fish tracking study as a result of the 30% tilt of AR-08.

However, as a conservative measure, we plan to retrieve and reset AR-08 on the next monthly monitoring event.

One additional point, the FSP does not identify a specification for maximum receiver tilt of 15 degrees or any other specific value.

**Ken Tyrrell**

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From: Zhen, Davis [<mailto:Zhen.Davis@epa.gov>]  
Sent: Monday, November 5, 2018 7:55 AM  
To: Tyrrell, Ken <[ken.tyrrell@aecom.com](mailto:ken.tyrrell@aecom.com)>  
Cc: Scott Coffey <[coffeyse@cdmsmith.com](mailto:coffeyse@cdmsmith.com)>; Sheldrake, Sean <[sheldrake.sean@epa.gov](mailto:sheldrake.sean@epa.gov)>;  
[younghs@cdmsmith.com](mailto:younghs@cdmsmith.com); Vickstrom, Kyle E. <[vickstromke@cdmsmith.com](mailto:vickstromke@cdmsmith.com)>  
Subject: Acoustic fish tracking study - operation of receiver PDI-AR-A08

Ken,

On 11/1/2018, EPA oversight observed that fish tracking receiver PDI-AR-A08 has a 30-degree tilt, exceeding the 15-degree maximum tilt specification in the FSP. Please provide EPA notification on how and when this will be corrected in the field and what implications this has on data quality for the fish tracking study.

Thanks,

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